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THE INDIAN FORESTS

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THE INDIAN FORESTS

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CONTENTS

	Page
Historical.....	607
Extent and importance of the Indian forest resources.....	610
Timber.....	613
Annual cut and potential production of timber.....	613
Management of Indian forests.....	614
Land and allotment policy.....	614
Peculiar aspects of Indian problem.....	618
General forest policy.....	620
Silvicultural practice.....	621
Grazing resources and administration.....	621
Watershed protection and water conservation.....	623
Wild life.....	623
Recreational possibilities.....	624
Other uses of Indian forests by Indians.....	624
Forest fire prevention and suppression.....	626
Control of insects and disease.....	627
Development of personnel.....	628
Cost of forestry work.....	629
Conclusion.....	629
Literature cited.....	632

HISTORICAL

Among the duties assigned to the War Department, when it was created by Congress under the act of August 7, 1789, were those "relative to Indian affairs."

The Office of the Commissioner of Indian Affairs was created in the War Department by the act of July 9, 1832. Subject to the Secretary of War and the President, the Commissioner was to have "the direction and management of all Indian affairs and all matters arising out of Indian relations." Two years later, on June 30, 1834, an act was passed "to provide for the organization of the Department of Indian Affairs." Certain agencies were established, others abolished. This act, considered the organic law of the Indian Department, provided for subagents, interpreters, and other employees, the payment of annuities, the purchase and distribution of supplies, etc.

The Bureau of Indian Affairs passed from military to civil control when the Department of the Interior was created by the act of March 3, 1849. Under section 441 of the Revised Statutes—

The Secretary of the Interior is charged with the supervision of public business relating to * * * the Indians;

and section 463 provides that—

The Commissioner of Indian Affairs shall, under the direction of the Secretary of the Interior and agreeable to such regulations as the President may prescribe, have the management of all Indian affairs and of all matters arising out of Indian relations (1, p. 1).¹

¹ Italic figures in parentheses refer to literature cited, p. 632.

Thus the Bureau of Indian Affairs has had the custody and management of Indian matters for over 100 years.

From the date of discovery of this country, when, nominally at least, the Indians were in possession of all the land, certain Indian rights of occupancy have been recognized, and it has been customary from the earliest days to secure at least a color of title from the Indians by the payment of a relatively small sum for the land that was acquired from the natives. A Federal act of 1790 (1 Stat.L.137) provided that no sale of land by an Indian or a tribe to any person or persons or to any State should be valid unless made under the provisions of a Federal treaty with the tribe. Under authority of this act the Federal Government continued to make treaties with the Indians for the cession of lands as if they were separate nations (2, p. 1041). Lands reserved to the Indians by these treaties came to be known as "Treaty reservations." This policy was discontinued in 1871, when by act of March 3 (16 Stat.L.566) the Congress declared that thereafter no treaties should be made with Indian tribes. By this act the Congress asserted its plenary power to legislate with respect to Indian affairs and to make whatever disposition of Indian lands appeared necessary or advisable. This power, even to the extent of abrogating a treaty, has been fully sustained by the Supreme Court. Under authority of this act, the lands which have been set aside for the use and occupancy of the various Indian bands and tribes by Executive orders have come to be known as "Executive order reservations."

Under various enabling acts, many allotments to individual Indians or additions to existing reservations have been made from the unappropriated public domain and many thousands of acres of land have been purchased for tribal or individual Indian use. Thus the four sources of Indian lands now under the jurisdiction of the Bureau of Indian Affairs are in order of their importance, as follows:

1. Treaty reservations.
2. Executive order reservations.
3. Additions to reservations by—
 - (a) Purchase.
 - (b) Executive order from public domain.
 - (c) Executive order from national forests, and other national reservations.
4. Individual allotments—
 - (a) From unappropriated public domain.
 - (b) By purchase.

The various Indian reservations originally contained, as many of them still do, a great deal of fine timber. As has been the case with other forms of Indian property, the amount of interest, both official and general, evidenced in Indian timber has kept pace with the economic value of this Indian property. Generally speaking, Indian reservations were made in what was then relatively inaccessible country, and the exploitation of Indian timber resources, whether irregular and illegal in the early days as has been alleged, or under the supervision of the Federal Government in more recent times, has grown with the general economic development of those regions in which Indian reservations with important timber resources were located. Thus, from 1789 when the "Indian problem" was first officially recognized until the early 1880's, no great amount of attention was paid to the question of the actual ownership or management

of the timber on Indian reservations. It was an early policy of the Indian Service, however, to permit Indians to remove timber from reservations for sale.

Due to the actual need of the Indians and of their still more urgent imaginary need for funds, and in view of the pecuniary interest of the lumbermen and their agents in the acquirement of logs or stumpage from Indian lands, it may be conceded that not all the proceedings were strictly regular and ethical (2, p. 1042).

During this period the Indian timberlands were probably subject to much less illegal pilfering than were the timber resources of the entire Nation which were contained within the great area of unsettled, unpatented public lands. Although many complaints of timber stealing from public and Indian lands had been made in the early part of the nineteenth century it was not until the late 1860's that reports of reservation timber looting became numerous. Additional complaints during the next 20 years aroused public interest in this phase of the problem of Indian affairs, sufficiently to stir up a congressional investigation of Indian timberlands in the Lake States in March 1888 (3, p. 228).

For many years there had been a difference of opinion as to whether or not the property rights vested in the Indians for reservations established by treaties or Executive orders included standing timber. As late as 1873 it was declared by the highest court that the Indians had only a bare right of occupancy in their lands, and in 1888 and 1890 two successive Attorneys General of the United States held that the proceeds derived from timber cut in trespass from lands held in common by Indians under the ordinary Indian title belonged to the United States and not to the Indians of the band occupying the reservation (2, p. 1042). These decisions were greatly at variance with the then existing policy of the Indian Service, which allowed Indians to remove timber for sale. This difference of opinion, the complaints of irregularities in Indian timber matters, and the growing consciousness or awakening of the entire Nation to the general timber problem, were all factors in bringing the timber resources of the Indians before the public, and for the enactment of legislation looking to the proper management of these resources. Although the question of property rights in timber has been definitely settled by Supreme Court decisions, many people still think of and discuss Indian timber resources as if they were public property.

By an act of February 16, 1889 (25 Stat.L., 673) the Congress authorized the cutting of dead timber from any Indian reservation for sale, providing the President was satisfied there was no evidence that the timber had been intentionally burned. Several other acts pertaining to specific reservations (3, p. 230) were passed from 1889 on, which are interesting mainly because they were instrumental in setting up governmental machinery to dispose of Indian timber and mark the beginning of forestry work in the Indian Service, in that they provide for "the scientific and businesslike disposal of the Indian pine lands and the full protection of the rights of the Indian in connection therewith."

No act of general application other than the "dead and down" act of February 16, 1889, was passed until the act of June 25, 1910 (36 Stat.L., 857) which authorized the sale of mature timber from allotted lands anywhere within the United States and from tribal lands of any

reservation except those in the States of Minnesota and Wisconsin. This act provided that the proceeds derived from sales of timber from tribal lands should be used for the benefit of the Indians of the reservation from which the timber was sold.

Prior to the passage of this act no general policy for the management of the Indian forest property had been promulgated. Questions of forestry policies on the several reservations had been handled administratively on the basis of the merits and needs of individual cases, and in accordance with legislation concerning specific reservations. For a short period (January 1908 to July 1909) the administration of Indian timberlands was under the jurisdiction of the Forest Service of the Department of Agriculture, but this agreement was in effect for too short a time to have much bearing on the development of a forest policy on Indian lands. Prior to 1910 the main development and exploitation of the Indian forests had, for economic reasons, taken place in the Lake States. The more inaccessible reservations of the West had received comparatively little attention, for the economic development of the West had not yet reached the point where there was any strong demand for the timber on these reservations.

The act of 1910, however, clearly contemplated conservative management of Indian timberlands, providing as it did for departmental regulations, and necessitating the development of a staff of men to carry out the intent of the act.

The organization of the forestry branch of the Indian Service, as it is today, was begun early in 1910, the Indian Appropriation Act for the fiscal year 1910 having set aside \$100,000.

To enable the Commissioner of Indian Affairs, under the direction of the Secretary of the Interior, to make investigations on Indian reservations and take measures for the purpose of preserving living and growing timber, and removing dead timber, standing or fallen; to advise the Indians as to the proper care of forests, and to conduct such timber operations and sales of timber as may be deemed advisable and provided for by law.

Similar items in every Indian appropriation act subsequent to 1910 have made possible the building up of the Forestry Branch of the Indian Service.

EXTENT AND IMPORTANCE OF THE INDIAN FOREST RESOURCES

The fact that the net acreage of Indian land has increased in recent years is of interest. On June 30, 1929, there were approximately 71 million acres of lands held in trust for the Indians by the Government, of which 39 million acres had been allotted to individual Indians and 32 million acres was unallotted or tribal land (table 1). During the fiscal years ending June 30, 1930, and June 30, 1931, the area of Indian allotted lands increased by about 43,000 acres, owing to the excess of acreage of new allotments over acreage of allotted land sold and fee patented, and the area of unallotted land increased by about 181,000 acres, the excess of areas purchased and added by Executive orders over areas allotted; making a net increase of about 224,000 acres.

Approximately 9 million acres of Indian forest land are under the jurisdiction of the Forestry Branch of the Indian Service, but it is impossible to list these lands as allotted or unallotted.

There are approximately 40 millions of acres of grazing land on the Indian reservations that are of major importance from a grazing standpoint.

TABLE 1.—*Areas of Indian lands, by regions*

Region and State	Total area	Allotted lands	Unallotted lands ¹	Forest lands managed by Forestry Branch ²	Grazing lands on large reservations ³
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Middle Atlantic: New York.....	87, 677		87, 677		
South:					
Florida.....	26, 741		26, 741		
North Carolina.....	63, 211		63, 211	56, 000	
Oklahoma.....	19, 184, 863	19, 145, 906	38, 957		
Total.....	19, 274, 815	19, 145, 906	128, 909	56, 000	
Central:					
Iowa.....	3, 480		3, 480	(⁴)	
Kansas.....	272, 661	271, 478	1, 183		
Nebraska.....	360, 057	352, 652	7, 405		
Total.....	636, 198	624, 130	12, 068	(⁴)	
Lake:					
Michigan.....	273, 702	273, 547	155		
Minnesota.....	1, 491, 026	935, 299	555, 727	870, 000	
North Dakota.....	2, 194, 010	2, 192, 903	1, 107		462, 768
Wisconsin.....	604, 459	330, 874	273, 585	410, 000	
Total.....	4, 563, 197	3, 732, 623	830, 574	1, 280, 000	462, 768
Rocky Mountain North:					
Idaho.....	677, 206	619, 847	57, 359	58, 675	428, 896
Montana.....	6, 529, 436	5, 759, 301	770, 135	1, 249, 986	5, 325, 062
Total.....	7, 206, 642	6, 379, 148	827, 494	1, 308, 661	5, 753, 958
Rocky Mountain South:					
Arizona.....	20, 463, 020	172, 868	20, 290, 152	1, 454, 000	20, 617, 068
Colorado.....	478, 154	82, 011	396, 143	184, 000	
Nevada.....	847, 409	15, 227	832, 182	4, 000	271, 449
New Mexico.....	3, 888, 821	353, 971	3, 534, 850	362, 000	1, 799, 100
South Dakota.....	6, 671, 906	6, 408, 795	263, 111	40, 000	4, 963, 656
Utah.....	452, 627	111, 947	340, 680	131, 000	311, 333
Wyoming.....	2, 243, 822	246, 822	1, 997, 000	200, 000	1, 869, 367
Total.....	35, 045, 759	7, 391, 641	27, 654, 118	2, 375, 000	29, 831, 973
Pacific Coast:					
California.....	595, 171	99, 840	495, 331	253, 000	
Oregon.....	1, 742, 938	619, 063	1, 123, 875	1, 464, 000	1, 551, 963
Washington.....	1, 991, 818	1, 136, 917	854, 901	1, 910, 037	2, 168, 897
Total.....	4, 329, 927	1, 855, 820	2, 474, 107	3, 627, 037	3, 720, 860
United States.....	71, 144, 215	39, 129, 268	32, 014, 947	⁵ 8, 646, 698	39, 769, 559

¹ General data concerning Indian reservations. Office of Indian Affairs, October 1929, p. 21.

² From an extensive survey made by the Forest Service, 1931-32.

³ From an unpublished report of an economic survey of the range resources and grazing activities on Indian reservations, by Lee Muck, July 1931.

⁴ Less than 500.

⁵ This figure does not include 6,772,000 acres of the noncommercial forest land, mostly of piñon-juniper type, in Arizona and New Mexico.

In national terms, the 71 million acres of Indian reservations amount to about 3.7 percent of the total land area of the United States; the 9 million acres of Indian forest lands constitute only 1.4 percent of all potential forest land; and the 40 million acres of grazing land on Indian reservations are only 5 percent of all range lands. However, because the majority of the Indian reservations are located in the central and western regions of the country, the importance of Indian forest and range lands is much greater when considered from a regional standpoint. The distribution of forest lands is shown in table 2. Similar detail for grazing lands is not available, but since these are mainly found on the larger reservations, the bulk of them is in Western States where the stock-raising industry is most actively engaged.

TABLE 2.—Comparison of Indian forest lands and timber with totals for States and regions ¹

Region and State	Forest land			Saw-timber stand		
	All land	Indian reservations		All timber	Indian reservations	
	<i>M acres</i>	<i>M acres</i>	<i>Percent</i>	<i>Million ft.b.m.</i>	<i>Million ft.b.m.</i>	<i>Percent</i>
Lake:						
North Dakota.....	545			53		
Michigan.....	19,500			16,430		
Minnesota.....	21,127	870	4.12	8,580	115	1.34
Wisconsin.....	16,595	410	2.47	10,824	969	8.95
Total.....	57,767	1,280	2.22	35,887	1,084	3.02
Central (West):						
Iowa.....	2,358	(²)		1,107	(²)	
Missouri.....	17,500			3,689		
Total.....	19,858	(²)		4,796	(²)	
North Rocky Mountain:						
Idaho.....	22,479	59	.26	96,592	63	.07
Montana.....	20,267	1,250	6.17	49,796	2,227	4.47
Total.....	42,746	1,309	3.06	146,388	2,290	1.56
South Rocky Mountain:						
Arizona.....	19,426	³ 1,454	7.48	19,827	5,538	27.93
Colorado.....	20,116	184	.91	47,379		
Nevada.....	10,847	4	.04	778		
South Dakota.....	1,875	40	2.13	3,208	48	1.50
New Mexico.....	19,729	³ 362	1.83	14,389	534	3.71
Utah.....	8,383	131	1.56	7,791	10	.13
Wyoming.....	6,714	200	2.98	32,584	865	2.65
Total.....	87,090	2,375	2.73	125,956	6,995	5.55
Pacific coast:						
California.....	27,371	253	.92	282,460	2,918	1.03
Oregon.....	29,956	1,464	4.89	437,852	9,130	2.09
Washington.....	22,215	1,910	8.60	321,316	9,294	2.89
Total.....	79,542	3,627	4.56	1,041,628	21,342	2.05

¹ Forest Service, data. Areas withdrawn from timber use, as in parks, not included.
² Less than 500.
³ These figures do not include the acreage of noncommercial piñon-juniper type.

In certain lumber- and livestock-producing localities (subdivisions of the regions given in table 2), and on important protection watersheds, Indian timber, range lands, and protection forests constitute one of the major classes of ownership and play an important part in industry and protection.² For example: Of the commercial timber tributary to the Klamath Falls (Oreg.) lumber manufacturing district, 47 percent is privately owned, 31 percent is on national forests, and 22 percent is on the Klamath Indian Reservation.

Of the commercial timber tributary to the upper Columbia River (Okanogan, Ferry, and Stevens Counties in Washington), 33 percent is privately owned; 32 percent is on Indian reservations; 25 percent on national forests; and 10 percent on State lands.

In eastern Oregon, including the Klamath District, the cut of Indian timber is over 20 percent of the total annual cut.

Similar examples showing the regional importance of Indian protection forests and grazing lands could be given if space permitted. Although some of the Indian reservations do not have timber and

² The following examples are taken from an unpublished report (1931) by Lee Muck on the status of Indian forests in relation to a national program of sustained yield.

grazing resources of great commercial importance, and the development of these resources will naturally be limited to local requirements; yet, in formulating a national or regional forest program of general application, the major commercial forest and grazing resources of the Indians, comprising as they do a considerable portion of the total regional potentialities, should be reckoned with and assigned to their proper place in the general scheme of things.

TIMBER

Indian forest lands support various kinds of timber, including the Appalachian hardwoods of North Carolina; the pine, hemlock, and hardwoods of the Lake States; the pine-fir-larch of Montana and the Inland Empire; the fir-spruce-cedar of the North Pacific; the redwood-fir of California; and the pine types of Arizona.

Of the 16 Western States containing approximately 68½ million acres of Indian land (or about 96 percent of the total) (table 1) six States, the Dakotas, Nevada, Nebraska, Kansas, and Oklahoma, do not contain Indian-owned forests in sufficient quantities to be of commercial importance. The bulk of merchantable timber in Indian ownership is in the States of Washington, Arizona, Oregon, and Montana, and consists of stands of timber typical of these States.

Accurate statistics of the extent and character of these resources are not available. The Forestry Branch of the Indian Service estimates, however, that there remained on June 30, 1931, approximately 30 billion feet of merchantable Indian-owned timber with a value of approximately \$100,000,000, and about 10 billion feet of unmerchantable timber. Although a large part of the merchantable timber stands on lands which have been allotted to individual Indians, large bodies of timber remain in tribal ownership on some reservations.

ANNUAL CUT AND POTENTIAL PRODUCTION OF TIMBER

Over 7½ billion feet of timber with a value of about \$33,000,000 has been removed from Indian lands under the jurisdiction of the Forestry Branch of the Indian Service since 1910, as given by years in table 3. This total does not include approximately 2 billion feet of timber which was sold from lands of the ceded Chippewas in Minnesota under the supervision of the General Land Office, and sales of land and timber belonging to the Choctaw and Chickasaw tribes in Oklahoma for about \$9,000,000.

TABLE 3.—*Timber cut from Indian lands* ¹

Year	Volume	Value	Year	Volume	Value
	<i>M ft. b.m.</i>	<i>Dollars</i>		<i>M ft. b.m.</i>	<i>Dollars</i>
1910.....	141, 532	900, 612	1922.....	216, 583	808, 551
1911.....	137, 208	752, 303	1923.....	493, 563	1, 856, 323
1912.....	123, 472	739, 699	1924.....	510, 314	1, 937, 245
1913.....	170, 766	1, 028, 184	1925.....	467, 779	1, 921, 157
1914.....	143, 426	780, 856	1926.....	579, 958	2, 446, 455
1915.....	138, 624	773, 483	1927.....	627, 365	2, 953, 752
1916.....	167, 602	726, 483	1928.....	639, 244	2, 676, 779
1917.....	205, 312	715, 453	1929.....	660, 257	2, 818, 317
1918.....	323, 131	1, 253, 651	1930.....	561, 415	2, 313, 644
1919.....	291, 164	1, 303, 840	1931.....	314, 528	1, 238, 814
1920.....	398, 485	1, 585, 812			
1921.....	348, 300	1, 390, 436	Total.....	7, 660, 028	32, 921, 849

¹ Under jurisdiction of Forestry Branch.

Detailed possibilities of the potentialities of Indian forest lands for the production of tree crops are not available. The following general conclusions, however, are self-evident, and represent the best judgment of those familiar with Indian forest resources:

(a) Indian timber is being harvested faster than it is being replaced by growth.

(b) The amount cut annually may be subject to some fluctuation in the immediate future, but must inevitably decline from the most recent 5-year average.

MANAGEMENT OF INDIAN FORESTS

LAND AND ALLOTMENT POLICY

The general policies of the Indian Service since its organization have been subject to more or less change due both to administrative judgment and to the changing nature of the Indian problem itself. Since the problem of handling Indian forests is but one phase of the Indian question, forest policies cannot determine general policies. On the contrary, the exact opposite is true. The uncertain status of Indian lands is the crux of the present unsatisfactory situation. Not only is there no assurance that areas of Indian forest land now held in tribal ownership will have that status a decade from now, but the probability is that, in view of decisions of the Supreme Court, many thousands of acres of heavily timbered tribal land which is mainly, if not entirely, valuable for the growth of timber will be allotted to individual Indians.

The land policy of the Indian Service is and has been dependent almost in its entirety upon the then existing policy as to how Indian land was to be held in ownership, and especially with regard to the removal of measures originally designed to restrict the assumption of the Indian of the responsibility of property ownership and the extent to which he was able to forego his ancient method of living and assume economic independence in direct competition with the whites.

Originally all Indian lands, whether reserved by treaties or set aside by Executive orders, were held in common by the several tribes. Relatively early in the history of the Indian Service many allotments of land to individual Indians were made in fee, with a restriction on alienation, except with the consent of the Secretary of the Interior. Later on, under authority of the General Allotment Act of 1887, known as the Dawes Act, and numerous later acts of general scope or which pertained to specific reservations, many millions of acres of land have been assigned to individual Indians. Allotment acts have generally provided that the United States would hold the lands in trust for the allottee for a period of 25 years from the date of allotment, and at the end of that time would convey the land to the allottee or his heirs "in fee, discharged of such trust and free of all charge or incumbrance whatsoever." Trust periods have in many cases been extended, and many thousands of fee patents have been issued before the expiration of the trust period.

The primary purpose of the allotment (2, p. 1045) is theoretically to provide a home for the Indian, and by encouraging and aiding him in achieving economic independence by the pursuit of agricultural and stock-raising activities dissolve the tribal relationship and thus solve the Indian problem. There can be no doubt, in view of

the general objective sought in the allotting of land to individual Indians, that the original intention was to allot only agricultural land. By implication the General Allotment Act of 1887 did not include timberland. However, upon reservations where there was an insufficiency of agricultural land to supply all members of the tribe with allotments, where the better agricultural land was covered with timber, where practically all the land was forested, or where the allotment was made under special acts, timberlands have been allotted. In addition to this, decisions of the courts (unfortunate from the standpoint of timber conservation and sustained yield forest management) have forced the allotting of many thousands of acres of timberland to individual Indians. A notable example is the Quinalt Reservation in Washington. Recent legislation has been passed (act of May 21, 1928), authorizing the allotment of grazing lands on the Shoshone Reservation in Wyoming from which no Indian (or white) can wrest a living.

Individual Indian allotments soon pass out of governmental control in either of two ways:

1. By the issuance of fee patents or certificates of competency to the allottees or their heirs, permitting their sale by the individual.

The records show that the lands of a vast majority of Indians who have been given absolute control of their allotments have passed from Indian ownership in various ways—by sale for small values, through unredeemed mortgages, and in some instances by tax deeds (13, p. 10).

2. Through outright sales, made to private individuals or corporations by the Government for and in behalf of the allottees or their heirs. The heirship of an Indian allotment frequently becomes so badly involved that the shares of each heir are of small value and the tangled records can best be cleared by an outright sale of the land.

The policy of the Indian Service with regard to the issuance of fee patents and certificates of competency, and the sale of allotments has varied greatly since 1900 and has had a marked effect on the formulation and carrying out of forest policies on these lands. Under provisions of the acts of May 8, 1906 (34 Stat.L., 182) and June 25, 1910 (36 Stat.L., 855) fee patents were issued under a rather conservative policy, until about 1916, when "competency commissions" were appointed which recommended the issuance of fee patents to large numbers of "competent" Indians.

In 1920, the Commissioner (14, p. 49) reported:

Since the Declaration of Policy in 1917 (patents in fee issued to Indians of one half or less Indian blood without any further proof of competency), 17,176 fee patents have been issued which is nearly double the number issued in the 10 years preceding.

The rather liberal policy followed from 1915 to 1920 with regard to the issuance of fee patents was made more conservative in 1921. In 1922 the Commissioner stated (15, p. 15):

A stricter policy has been followed in issuing patents to Indians on the ground of competency, as seemed to be required in order to more fully protect their interests.

In his report for the fiscal year 1926, the Commissioner stated (13, p. 10):

For the past 5 years a conservative policy has been pursued in granting fee titles to individual Indians * * *.

In 1927, the Secretary of the Interior recorded (8, p. 12) a still further back swing of the pendulum:

* * * The act of February 26, 1927, which authorized the cancelation of patents in fee issued without application for or consent of the patentee in cases where the land has been neither encumbered nor sold. Pursuant to this legislation and to decisions of the Federal court, a number of patents heretofore issued were canceled.

It is interesting to note that the acreage of Indian allotments fee-patented in those years for which data are available varied from over 1,400,000 acres in 1920 to about 30,000 in 1931.

Meriam and associates stated in 1928 (9, p. 40) that:

All land which has been or will be allotted to individual Indians must become inherited land in a relatively short space of time, and will pass from Indian ownership, as millions of acres have already done.

The problem of inherited land should be given thorough detailed study * * *. It is doubtful if the serious nature of this problem was appreciated at the time the allotment acts were passed. Because of this feature of the allotment system the land of the Indians is rapidly passing into the hands of the whites, and a generation of landless, almost penniless, unadjusted Indians is coming on. What happens is this: The Indian to whom the land was allotted dies leaving several heirs. Actual division of the land among them is impracticable. The estate is either leased or sold to whites and the proceeds are divided among the heirs and are used for living expenses. So long as one member of the family of heirs has land the family is not landless or homeless, but as time goes on the last of the original allottees will die and the public will have the landless, unadjusted Indians on its hands.

This condition is already well advanced in some instances, such as the Chehalis, Nisqually, and Skokomish Indians of Washington.

Meriam and associates also state (9, p. 41) that:

The policy of individual allotment has largely failed in the accomplishment of what was expected of it. It has resulted in much loss of land and an enormous increase in the details of administration without a compensating advance in the economic ability of the Indian.

As to what has happened to allotments which have been fee-patented, the annual report of the Commissioner of Indian Affairs for the fiscal year 1921 (16, p. 25) contains this very interesting statement:

As is well known, the law provides for issuing to the Indian a trust patent upon the land allotted to him, which exempts it from taxation and restricts him from its sale or encumbrance until he is declared competent to manage his business affairs, when he may, upon application, receive a patent in fee and be free to handle or dispose of his land the same as any white citizen.

It is doubtful if a satisfactory method has been found for determining the competency upon which to base a termination of the trust title. Applications for patents in fee have too often been adroitly supported by influences which sought to hasten the taxable status of the property or to accomplish a purchase at much less than its fair value, or from some other motive foreign to the Indian's ability to protect his property rights.

Notwithstanding the sincere efforts of officials and competency commissions to reach a safe conclusion as to the ability of an Indian to manage prudently his business and landed interests, experience shows that more than two thirds of the Indians who have received patents in fee have been unable or unwilling to cope with the business acumen coupled with the selfishness and greed of the more competent whites, and in many instances have lost every acre they had.

Thus the net result of continued allotting of land to individual Indians will result in continued loss of land to the Indians with no real compensating economic gain, and "the public will have the landless unadjusted Indians on its hands." This applies particularly to forest and range land.

Many Americans entertain the very erroneous view that the individuals in every tribe or band of Indians, to whom allotments have been made, have received all that they need to enable them to achieve economic independence. This view is based upon egregious misunderstanding of the facts. There are hundreds, possibly thousands, of instances (greatly increased since this article was written) in which Indians have been given allotments of 80 or 160 acres upon which it is utterly impossible for an Indian, or a white man, to make a livelihood. Such individuals must on many reservations rely upon the privilege of grazing stock on tribal land to obtain a living (12, p. 619).

On many reservations relatively large areas of forest and range lands remain which if retained in tribal ownership and conservatively managed will not only be a source of uninterrupted revenue to the Indians but will continue to play an important and essential part in the economic life of the Indians by their use of tribal grazing, hunting, and fishing resources. On many reservations Indians have already lost their allotments, have not been assimilated, and are dependent on tribal lands of their own tribe or that of other tribes for a place to live.

The breakdown of unified ownership of tribal lands has not only been accomplished through the making of allotments but has been furthered by the throwing open to homestead entry by whites of hundreds of thousands of acres of so-called "agricultural land" not infrequently covered with timber, on which the white settlers have been unable to make a living and which they have abandoned. To the substantiation of this fact hundreds of abandoned shacks and fairly well constructed houses now scattered over the Flathead (Montana) and Colville (Washington) Reservations give mute but impressive testimony.

The checkerboard ownership of forest lands on Indian reservations which has resulted from the above and the knowledge that this condition is apt to become worse in the future are responsible for what is perhaps the most difficult problem of forest and range administration on Indian lands. Indeed the damage done must not only be corrected insofar as is practicable, but if the proper management of Indian forest and range lands, both from the standpoint of the Indian owners and the general public, is to be made possible, prompt action must be taken to prevent like occurrences on reservations where large areas of forest land remain in tribal ownership.

The time when the American Indians as a race will have acquired a sufficient amount of general economic background, knowledge, and ability to enable them to live successfully in a white man's world without governmental aid has certainly not arrived yet. When it will arrive is a matter of opinion and will depend in a large measure upon how thoroughly and promptly the United States discharges its all-too-evident duty to these people. Meriam and associates, after a thorough investigation of the Indian problem (9, p. 746), ventured this statement:

The survey staff found no evidence that warrants a conclusion that the Government of the United States can at any time in the near future relinquish its guardianship over the property of restricted Indians secured to the Indians by Government action. Although the staff believes in the transfer of the activities relating to the promotion of health, education, and social and economic advancement of the Indians to the several States as rapidly as the States are ready effectively to perform these tasks, it is of the opinion that the guardianship of property should be the last duty thus transferred if it is transferred at all.

PECULIAR ASPECTS OF INDIAN PROBLEM

In considering the management of Indian forest lands, allowance must be made for certain aspects which are peculiar to the Indian problem.

Indian lands "are private property, held in sacred trust by the United States for the benefit of the Indians" (5, p. 841). The United States Indian Service was designated by the Congress more than 100 years ago as the Government bureau responsible for the custody and administration of Indian property, and this property has been and is now handled by the Indian Service in accordance with provisions of laws enacted by the Congress and interpreted by the courts. Under these laws and interpretations the Indians are entitled to enjoy the full benefit to be derived from forests and other natural resources on their lands. Indian forests are owned by Indians and managed primarily for the best benefit of their Indian owners, and Indian forest policies and Indian forestry activities cannot be determined and carried on solely from the standpoint of technically correct forest working or management plans, nor with the forest needs of the entire body politic primarily in view.

Furthermore, forestry on Indian lands is inevitably tied up with the general Indian problem, a complex puzzle not yet solved and necessitating the consideration of many questions connected with the educational, social, and industrial welfare of this race. The administration of Indian forest-property interests is inseparably intertwined with other phases of Indian administration (5, p. 842), and it has sometimes been necessary to adopt Indian forest policies widely divergent from theoretically correct forest-management policies because of the needs of the Indian owners. Indian forest policies must be varied and modified to fit social and economic conditions on the several reservations and even on different parts of the same reservation.

On some reservations the merchantable stand of timber on tribal lands constitutes practically the only source of revenue from which the cost of social and industrial betterments for the tribe can be met by the Indian Service. Hundreds, nay, even thousands, of destitute Indians have been allotted tracts of heavily timbered land. The only means the Indian Service has had through which to keep these unfortunate people from starvation is to sell their timber and derive therefrom as large a revenue as possible. Other recipients of heavily timbered allotments have needed money for educational purposes, for the building of houses, or for the purchase of farming equipment (6, p. 473). Under such circumstances, insistence upon the practice of a highly intensive forest policy cannot be justified. Such conditions demand flexibility not only in formulating general policies but in carrying them out.

Under the peculiar conditions which surround and govern the administration of Indian affairs, the permanency of Indian forest policies can be no greater than the permanency of general Indian Service policies which are based on legislation enacted by the Congress, interpreted by the courts, and carried out under regulations promulgated or approved by the Secretary of the Interior. Under decisions of the Supreme Court of the United States the status of Indian lands may be modified at any time by an act of Congress. Furthermore, there

have been court decisions holding that lands which the Indian Service considers primarily valuable for the production of timber crops may be selected by individual Indians for allotment purposes and thus become subject to private ownership irrespective of any policy or purpose of the Interior Department to hold such lands for timber production (or protection) purposes (7, p. 430).

The science of forestry, or at least that most fundamental phase of forestry dealing with the production and management of forest crops, is unavoidably a long-time proposition. Reasonable assurance as to the stability of land ownership of areas to be put under a scientifically evolved forest-management plan must be given before the postponement of some revenue from timber capital (under selective logging) and the expenditure of money for permanent improvements, reforestation, afforestation, and in some cases fire protection, can be justified.

These facts have long been recognized by those responsible for the management of the forest properties of the Indians, and must occupy the foreground of any picture of Indian forest policy or practice.

A further consideration that must be taken into account in any appraisal of the Indian forest problem is that the Indian Service as a whole, and the Forestry Branch in particular, has been undermanned and underfinanced since inception. The annual report of the Bureau of Indian Affairs for 1927 (8, p. 1) reads:

The Indian Service has not kept pace with the progress elsewhere along health, educational, industrial, and social lines. The appropriations for general purposes for the fiscal year 1923 were \$10,316,221.30, and in the 5 fiscal years since they have been increased by about \$2,338,463.70, principally for medical and health activities. But the cumulative effect of many years of financial neglect has demanded even larger appropriations, if the Government may perform its full duty to the American Indian. Underrating the requirements of the Indian Service has continued so long that it has become a habit difficult to correct.

In considering what has been accomplished in forestry activities on Indian lands in the last 22 years, the fact that the Forestry Branch of the Indian Service has never had sufficient funds for needed personnel, equipment, fire prevention and suppression, timber sale administration, and all other kinds of forestry work, must be fully recognized. Although a complete record of the quantity of timber involved and proceeds derived from timber sales from Indian lands has been kept, accurate statistics of other activities of the Forestry Branch of the Indian Service and of the forest properties under its supervision are, generally speaking, not available, solely because, with the limited authorized personnel and funds available, it has not been possible to compile data of this character.

Finally, the public attitude toward Indian lands must be considered to have had a very considerable influence on management policies. With but few exceptions, interest of the general public in the Indians has kept pace with the appreciation in value of Indian property. To quote (7, p. 431):

Just as land-hungry adventurers sought homestead and mining claims within national forests (mainly between 1905 and 1918), so did they surge about the borders of Indian reservations whetting their land appetites on various morsels of misinformation with respect to the fortunes lying dormant—yea, indeed locked up—within the illogical and arbitrary boundaries of Indian reservations.

It is a sad commentary on human nature, but a fact nevertheless, that a large amount of the interest of the public in general and the big majority of public organizations and individuals in Indian affairs

and property has been caused by cupidity. The result of the application of intense local and national political pressure has created serious questions in the actual management of Indian forest property.

GENERAL FOREST POLICY

The general policy of the Forestry Branch of the Indian Service may be quoted as follows (7, p. 434):

A. To administer all allotted timber lands so as to insure the highest present economic return consistent with a reasonable consideration of the future use to which the land will probably be devoted.

B. To administer all tribal lands that are primarily adapted to the production of timber, or the protection of slopes, in such manner as to secure the highest present economic return for the tribe that is consistent with theoretically correct forestry principles and to preserve these lands so that whether they remain permanently as communal lands of a tribe, are acquired by the Federal or State Government, or are sold in large areas to private interests, they shall remain productive and capable of doing their part toward insuring the future welfare of the citizens of the United States of which the Indians themselves are a part.

All sales of Indian timber made under authority of the act of Congress of June 25, 1910, have clearly contemplated the cutting of the timber in such manner as to insure the maintenance of the forest cover on all lands primarily adapted to the production of timber crops.

In evolving and carrying out timber-sale plans the following points, given in order of importance, have been considered:

A. The financial need of the Indians, individually and collectively.

B. The potential and actual resources of the Indians and the extent to which it is necessary for them to liquidate their timber capital to provide funds for social, educational, industrial, and general economic betterments.

C. The demand for Indian stumpage.

D. The extent to which scientific forestry can be practiced in view of the above.

Timber-sale plans, in addition to the above, must be and have been varied to fit different silvicultural conditions obtaining on the several reservations and even on different parts of the same reservation. In fact, when other considerations (particularly economic) remain constant, timber-sale plans are almost entirely dependent upon what is desirable and feasible from a silvicultural standpoint.

J. P. Kinney states the situation (7, p. 433) in general terms thus:

On many reservations a large part of the standing merchantable timber was mature or over-mature and the removal of all mature timber would leave little reproduction or advance growth. On areas of this character it has been the policy to leave a part of the mature timber for seed trees. Where there is a mixed stand of mature and immature trees of yellow pine, or mixed types; in the yellow-pine region, a true selective cutting has been made. In the Douglas fir, cedar, spruce, and hemlock type of western Washington we have generally followed the policy of cutting all mature trees and, as all who are familiar with these coast types know, very few trees of any species remain uninjured when the logging is completed.

* * * The conditions are quite variable on reservations both in the Northwest and the Southwest. On the Colville in Washington fairly satisfactory reproduction conditions exist which are coupled with most extreme fire danger; on the adjoining Spokane fully as good reproduction factors are found with materially lower fire risk and with a much larger percentage of the timber land included within allotments; on a large part of the Klamath there is little reproduction or advance growth associated with over-mature stands, and on the Flathead the saw timber has been reserved for the tribe on tens of thousands of acres for which individual Indians have been given trust patents. * * * On

the Mescalero and Fort Apache Reservations in the Southwest, where excellent conditions for western yellow pine reproduction and quite generally fair advance growth on tribal lands are found, the reserving of a fair stand of vigorous young or middle aged trees is justified; but on the Jicarilla where practically all timber land is allotted and the beneficial interest of the tribe in the timber will expire in 1932, the removal of the greater part of the mature timber is clearly indicated.

SILVICULTURAL PRACTICE

The forestry branch of the Indian Service is now guided, and has been for some years, by broad conservative forest policies which may be summarized as calling for the maximum returns from Indian forest resources consistent with sound silviculture. Although the silvicultural practice followed on the various reservations has been made to fit local forest conditions wherever possible, the utter impossibility of accomplishing very much silviculturally as long as land tenure is most uncertain is obvious. In spite of this obstacle of uncertain land tenure Indian Service foresters have been guided in the development of silvicultural practice by the probable future use of lands now forested as well as by the necessity of realizing the maximum returns to the Indians. Notwithstanding the peculiar difficulties involved, the development of silvicultural practice on Indian reservations has kept pace with the general development of this science on publicly managed lands and is far in advance of that obtaining on the vast majority of private lands. The results obtained on two reservations where the land tenure is less uncertain than on the average reservation, namely the Menominee in Wisconsin and the Klamath in Oregon, have been highly commended by foresters of national and international reputation.

In view of legislation and court decisions which have resulted in the allotting of much valuable timberlands to individual Indians, sustained yield cannot be successfully practiced on some Indian reservations until the property rights of individual Indians established by the courts have been taken care of. If tribal forests are to be established and put on a sustained yield basis, or if Indian forest areas in their present ownership are to be put on that basis, individual Indians must, in all equity, be compensated for the loss of income from their personal property. Any plan of sustained yield and unified ownership cannot, in justice to the Indian, be promulgated and legislated without acknowledging and fully satisfying the property rights of individual Indians. "Foresters should not sacrifice the well-established rights of men on the altar of speculative theory as to the rights of trees."

GRAZING RESOURCES AND ADMINISTRATION³

The scope of country embracing the important livestock-producing Indian reservations is very large and includes many variations in range conditions. Of the 40 millions of acres of grazing land in Indian reservations about 13 million acres is in the Great Plains region of the Dakotas, Montana, and Wyoming; 4 million acres in the Intermountain region of Idaho and eastern Washington and Oregon; and 23 million acres in the Southwestern States of Utah, Colorado, Arizona, and New Mexico. These large areas, conforming in general characteristics to those of the semiarid regions in which they are

³ Material presented under this heading has been taken, in part, from a report by Lee Muck, entitled "An Economic Survey of the Range Resources and Grazing Activities on Indian Reservations."

situated, are suited to the large-scale production of range livestock. The natural features of some reservations limit their economic possibilities to the development of this industry, and the crop of native forage is the most valuable product of a large area of Indian lands. In 1929, 1,396,776 head of stock owned by individual Indians, 51,411 head of tribally owned stock, and 946,069 head of permitted stock owned by whites obtain pasturage on Indian reservations and brought in a cash income of about \$700,000.

Immediately after the organization of a forestry unit in the Indian Service in 1910, attention was given to grazing conditions on reservations in the Southwest, and for 6 or 8 years supervision of grazing activities was maintained on several reservations. As efficient forest organizations were developed on timbered reservations in the Northwest, range control has been assumed on the Flathead, Colville, and Yakima Reservations (some 15 years ago), and more recently on the Klamath, Spokane, and Tongue River Reservations. With these exceptions, grazing matters on Indian lands have not been an activity of the Forestry Branch, but have been handled by the superintendents of the several reservations. On April 15, 1930, the Secretary of the Interior placed the supervision of all range activities on Indian lands in the forestry branch.

In the administration of Indian grazing resources, it has been the policy of the Indian Service, in accordance with existing regulations, which provide for season of use, number and class of stock, etc., to give preference to Indians owning herds. Excess grazing land not needed by Indians is then blocked out into units and adequately advertised, sealed bids are required, and the units are leased to the highest bidders. This policy brings to the Indian owners the greatest financial return from use by whites of their grazing resources.

The objectives of management and grazing policy have been summarized by Muck in the report already cited as follows:

A. The preservation of land, water, forest, and forage in a safe and entire state; the utilization of these resources for the purpose to which they were dedicated by nature; and the full enjoyment thereof, today, without destroying the promise of continued enjoyment tomorrow.

B. The permanent welfare of the livestock industry, generally, and the Indian livestock industry in particular, through proper care and improvement of grazing lands, under principles conforming to the requirements of practical operations.

C. The protection of the interests of the whole Indian people against unfair competition, the inequable utilization or distribution of forage values and the exploitation of communal and individual assets of the open range by the more aggressive individuals.

D. The conservative utilization of all forage resources, primarily through the development of the livestock industry among the Indians and secondarily, through the regulated sale of grazing privileges to the end that economic waste will be largely, if not wholly, eliminated and a balanced net income realized for the permanent benefit of the majority of the Indians.

The management policy contemplates the systematic regulation of Indian grazing resources by—

(a) Increase in the number of stock on undergrazed lands.

(b) Readjustment of existing ranges by carrying out carefully evolved and scientific grazing management plans to obtain the maximum amount of revenue consistent with sound practice.

(c) The reduction of the number of stock on the overgrazed reservations of the Southwest.

Existing regulations specify that where sufficient tribal lands are available, an Indian family may be permitted to graze not to exceed

50 horses, 100 cattle, or 500 sheep or a combined equivalent thereof in the several classes enumerated. This regulation has been sustained by Federal court opinion and has been rigidly enforced in both the northern Great Plains region and the Intermountain region. However, it has been violated and more or less consistently ignored in the Southwest region (10, p. 12, 300) where for decades these Indians have secured their main living from sheep and goats. The rehabilitation and revegetation of these overgrazed lands, without arousing the animosity and the violent opposition of those who obtain their precarious living from these ranges, is regarded as "a problem to tax the ingenuity and skill of any forester" (2, p. 1052).

Accurate data concerning the potential revenue which can be realized from Indian grazing lands are not available. It is probable, however, that, under scientific management, receipts in the future from grazing permits will not be less than the amount received in 1931. On the contrary with the return of normal economic conditions, the systematic use of available resources, and the discontinuance of certain unwise practices, such as the use of valuable range lands by large numbers of worthless Indian ponies, a substantial increase in revenue may be made.

Immediately after the supervision of range activities was given to the Forestry Branch an economic survey of the range resources and grazing activities on Indian reservations was undertaken. Shortly after the completion of this survey corrective measures were initiated and considerable progress has been made in systematizing and improving the management of this important Indian resource, although the usual handicaps of insufficient funds and personnel exist.

WATERSHED PROTECTION AND WATER CONSERVATION

It is not possible to give accurate statistical data concerning the importance of Indian forest lands for the protection of watersheds and for water-conservation purposes. Forests on many thousands of acres of Indian land may, however, properly be classified as protection forests, for very frequently the headwaters of streams of immense importance in irrigation projects are located within Indian reservations.

The policy of the Indian Service both with regard to forest and range lands is to administer these lands with their protective importance clearly in mind and to insure the maintenance of an adequate ground and tree cover. If, however, these lands are to receive the protection which their importance warrants, the uncertain tenure of ownership must be removed and the Indian Service given an increased personnel and more funds for protection purposes.

WILD LIFE

The majority of Indian reservations in the Western States are situated in the more inaccessible regions, and as a result of this remoteness and because on practically all reservations where Indians have been accustomed for generations to rely on game and fish for food, the right to hunt and fish regardless of season has been reserved for them in treaties.

Indian reservations as a rule are better stocked with wild life and fish than are adjacent lands. Also, the Indian, generally speaking, does not hunt or fish for sport but for food, and will not take more than is needed for that purpose.

Indians do not take kindly to the abrogation of hunting and fishing practices which are as old as the race itself. However, as they adapt themselves to the white man's methods of living their reliance on wild life for food supplies diminishes.

Whereas, not so many years ago, the Indian tribes were accustomed to hunt and fish on large areas of land; in recent years, due to the restriction and development of adjacent land, they have been confined to their reservations. Because of the restriction of hunting and fishing by Indians to their reservations, the supplies of game and fish have been reduced in recent years. While some streams have been stocked with fish, there is urgent need for the restriction of hunting and fishing out of season, and it will be necessary, if Indian streams and forests are to produce fish and game to potential capacity, to do a considerable amount of restocking streams with fish and woods with game.

The importance of the wild-life resources of Indian lands to the Indians varies with the degree that Indian tribes have departed from ancient modes of living and methods of obtaining food supplies, and they should be managed accordingly.

The policy of the Indian Service in this matter may be stated as follows:

1. Conservation of these resources by education and encouragement of the Indians in wise use.

2. Cooperation with State and Federal authorities and conformity with State and Federal laws and regulations whenever such conformity is possible under existing Indian treaties and would not deprive the Indians of an important source of food supply.

RECREATIONAL POSSIBILITIES

Development of the recreational possibilities of Indian reservations must always give primary consideration to the Indians. These possibilities are many, for Indian reservations include a great variety of lands not only of scenic and inspirational value on which all forms of outdoor sport and recreation may be enjoyed, but have an unusual attraction for many thousand vacationists annually because of the Indian himself and the history of his race.

The development of the recreational possibilities of Indian reservations for the benefit of whites cannot properly be undertaken by the Indian Service through the use of Indian tribal moneys. Specific gratuity appropriations would be needed for this work. The problem of management has been summed up by Kinney (11) thus:

The full realization of these possibilities may be achieved only through sincere and effective cooperation between the Indian Service, the Indians themselves, and those representatives of the general citizenry of the Nation who are able and willing to ascertain the true facts and ready to lend their support to all efforts toward a solution of the intricate problem of properly integrating the Indian lands and the Indian character with the national resources, physical, mental, and moral.

OTHER USES OF INDIAN FORESTS BY INDIANS

Indian forests have played and should continue to play an important part in the economic life of their owners by the use of Indian owned and operated sawmills of two general classes:

- (a) Small mills operated mainly to produce lumber and other building materials for Indian buildings, and

(b) Mills designed to manufacture lumber and other products for sale in commercial markets, as well as for Indian use.

As Indian labor is usually less efficient than white labor, and because small mills (with a daily output of 2,000 to 20,000 board feet) can be operated for only short periods, the commercial operation of Indian mills is difficult and has not been attempted in most instances. They are operated mainly to afford the Indians a means of industrial training and to act as an incentive in the improvement of housing conditions on the reservations, and their maintenance must be justified on educational and social grounds rather than economic. Accurate yearly statistics concerning these mills are not available. The number in operation has varied from 30 in 1911 to 25 in 1931. Besides paying the Indians a substantial amount of wages, these mills have exerted no little influence in industrial and social betterments on some reservations.

There are at present two sawmills (and logging operations) in Indian timber which are operated commercially by Indians under the supervision of the Forestry Branch, namely, on the Red Lake (Minn.) and Menominee (Wis.) Indian Reservations.

The Red Lake operation dates from 1925, has an output of approximately 5 million board feet per year, and (up to Apr. 1, 1930) paid the Indians over \$300,000 in wages and accumulated a stumpage credit of over \$250,000. The Menominee operation, started soon after the passage of the act of March 28, 1908 (35 Stat. L., 51), has earned (up to December 1930) a net income of over \$3,700,000 (stumpage and net operating profit) besides paying millions of dollars in wages to Indians. Meriam and associates in "The Problem of Indian Administration," Institute for Government Research, 1928, said (p. 516) concerning the Menominee operation:

At the Menominee Reservation Indians are employed both in the camps and in the mill. One got the impression that the Indians there were doing more work and prospering more than was the case on other reservations, and for this situation the policy of employing Indians in the timber and mill operation was apparently largely responsible. Interviews with the white officers on this reservation brought out the opinion that the policy of employing Indians increased the cost of production, that if a private commercial company had charge of the operations they could reduce labor costs by employing a smaller force made up almost entirely of white men. The tendency is to give the Indian who applies for work a job, whether he is actually needed at the moment or not, because the welfare of the Indians is placed ahead of the immediate interests of the balance sheet. At times Indians have occupied some of the more responsible positions requiring skill and experience, although it may be doubted whether they could have held these positions in a commercial mill where they would have been in direct competition with the whites. Despite this policy of preferring Indians, the available statistics indicate that the operations are carried on at a profit.

The survey staff has not made a detailed examination of the accounts of the Menominee operations, but it is of the opinion that even if the profits are not what they might be with a white staff, the undertaking is well worth while because of the training and economic opportunities it affords the Indians. It is not only a commercial enterprise, it is also educational. The superintendent at the time of the survey visit showed a keen appreciation of the social side of his task.

The number of Indians engaged in work with timber other than at Red Lake and Menominee is small. It has been stated on numerous occasions, however, that the advisability of initiating other tribal enterprises such as are now being carried on at Red Lake and Menominee should be carefully considered.

In addition to the above many thousands of Indians are dependent upon Indian timber for their fuel supply.

FOREST-FIRE PREVENTION AND SUPPRESSION

One of the most important duties of the Forestry Branch of the Indian Service is the protection of at least 9 millions of acres of Indian forest lands from fire. Many Indian reservations contain large areas of timberlands which are relatively inaccessible and undeveloped, making fire suppression exceedingly difficult and expensive. Although appropriations for this purpose have been somewhat increased in recent years, sufficient funds for equipment, improvements, and personnel to protect Indian forest land from fire adequately have not, generally speaking, been available. The Indian Service has, however, made considerable progress in this work. Since 1910, 43 lookout stations have been built, and over 4,500 miles of road, over 900 miles of trail, and about 2,500 miles of telephone line have been constructed which are principally of value for fire protection and suppression purposes (table 4).

Accurate statistics as to the causes and extent of forest fires, the resultant damage, and the costs of suppression of such fires on Indian reservations are not available over a long period of time. Table 5 presents the best record obtainable, based on reports submitted by superintendents and forest officers. It is probably somewhat in error, especially in the early years, in that some grass and open fires may have been included.

TABLE 4.—*Roads, trails, telephone lines, and lookouts on reservations of major importance from a forestry standpoint*

Reservation	Gross area	Look-outs	Roads	Trails	Tele- phone lines
Arizona:	<i>Acres</i>	<i>Number</i>	<i>Miles</i>	<i>Miles</i>	<i>Miles</i>
Fort Apache.....	1, 664, 872	5	445	-----	320
Northern Navajo.....	3, 084, 200	-----	117	-----	21
San Carlos.....	1, 610, 240	1	25	-----	46
Southern Navajo.....	3, 775, 765	1	450	-----	191
Western Navajo.....	3, 500, 000	-----	556	-----	169
California: Hoopa Valley.....	116, 064	-----	11	20	26
Idaho:					
Coeur d'Alene.....	63, 881	-----	-----	-----	2½
Fort Hall.....	492, 564	-----	30	-----	-----
Minnesota:					
Consolidated Chippewa.....	59, 270	3	32	-----	20
Red Lake.....	543, 528	4	50	-----	57
Montana:					
Blackfeet.....	1, 492, 042	1	8	-----	42
Flathead.....	1, 240, 000	1	1 200	-----	183
Rocky Boy.....	55, 040	-----	22	-----	15
Tongue River.....	442, 960	2	31	-----	66
New Mexico:					
Jicarilla.....	743, 220	2	300	-----	104
Mescalero.....	474, 240	1	-----	300	114
Santa Clara.....	30, 360	1	5	-----	3
North Carolina: Cherokee.....	63, 820	1	-----	-----	8
Oregon:					
Klamath.....	1, 107, 336	3	1, 040	-----	366
Warm Springs.....	463, 669	1	287	-----	135
Washington:					
Colville.....	1, 385, 086	6	409	488	305
Neah Bay.....	26, 952	-----	-----	-----	-----
Quinalt.....	189, 621	2	12	-----	29
Spokane.....	148, 635	1	128	11	73
Tulalip.....	22, 500	-----	6	-----	7
Yakima.....	1, 182, 030	4	237	6	174
Wisconsin:					
Lac du Flambeau.....	52, 491	-----	90	-----	8
Menominee.....	230, 400	3	90	-----	69
Wyoming: Shoshone.....	800, 000	-----	35	80	-----
Total.....	25, 060, 786	43	4, 616	905	2, 553

¹ Roads and trails.

TABLE 5.—Areas and total cost of forest fires on Indian Reservations

Year	Area	Suppres- sion cost	Damage	Year	Area	Suppres- sion cost	Damage
	<i>Acres</i>	<i>Dollars</i>	<i>Dollars</i>		<i>Acres</i>	<i>Dollars</i>	<i>Dollars</i>
1910.....	634, 101	31, 249	897, 587	1922.....	42, 043	47, 289	27, 937
1911.....	20, 841	3, 060	16, 989	1923.....	47, 394	60, 539	25, 307
1912.....	12, 504	4, 319	11, 581	1924.....	31, 101	22, 489	69, 388
1913.....	144, 536	11, 171	36, 634	1925.....	53, 946	50, 910	67, 337
1914.....	117, 173	14, 543	76, 983	1926.....	64, 553	51, 749	34, 521
1915.....	40, 354	5, 803	62, 637	1927.....	133, 287	92, 328	126, 532
1916.....	54, 492	10, 175	55, 448	1928.....	23, 333	32, 208	28, 739
1917.....	121, 791	30, 036	62, 887	1929.....	46, 249	47, 336	78, 602
1918.....	71, 968	11, 871	37, 139	1930.....	57, 160	61, 683	126, 398
1919.....	87, 201	32, 649	292, 135	1931.....	124, 324	136, 393	227, 564
1920.....	227, 869	27, 468	384, 739				
1921.....	140, 231	38, 808	205, 878	Total.....	2, 296, 451	824, 076	2, 952, 962

It is impossible to furnish at this time, detailed estimates as to the probable cost of adequately protecting Indian forest lands from fire. The average area burned over annually during the fiscal years 1927 to 1931, inclusive, has been about 75,000 acres. In the judgment of Indian Service foresters this average acreage could be reduced at least to 40,000 acres, and to accomplish this objective an annual appropriation of about \$450,000 is needed for the next 10 years. A large amount of this annual appropriation would be expended for permanent improvements such as roads, trails, and lookout towers, and in addition reasonable protection would be given to valuable timber resources which are producing many millions of dollars in revenue to the Indian owners as well as affording thousands of workers an opportunity to earn a livelihood.

CONTROL OF INSECTS AND DISEASE

Infestations of insects and epidemics of disease which damage and kill standing timber are not peculiar to Indian reservations. In fact such plagues are usually, if not always, of such scope and magnitude that they occur simultaneously and in common on national forests, national parks, Indian reservations, private lands and the public domain.

The most serious outbreaks now being combated are probably the white pine blister rust, and the ponderosa pine bark beetle. There is very little western white pine on most Indian reservations, but the bark beetle has seriously threatened timber on the Klamath Reservation in Oregon since about 1920. In 1922 funds for suppression and control of this pest were requested jointly by the Departments of Agriculture and the Interior.

In this work the Government departments were joined by private operators, since timber on lands owned by all three was infected. There has been expended on the Klamath Reservation since 1922 about \$118,000 on insect-control work, of which about \$75,000 has been spent by the Indian Service, about \$40,000 by the United States Forest Service, and \$3,500 by the Bureau of Entomology of the Department of Agriculture. The control work has followed recommendations of experts of the Bureau of Entomology. Twenty thousand dollars for insect control work on the Klamath Reservation was appropriated for the fiscal year 1933.

In 1912 approximately \$5,000 was spent on insect control work on the Tongue River Reservation in Montana, but funds were not available for this purpose in subsequent years until 1931 when about \$1,300 was expended.

Plagues of insect infestations and disease epidemics affecting standing timber are usually wide-spread and constitute a national menace. Funds for control work should be obtained and expended in suppression activities in such a way as will insure a high degree of correlated action between Federal, State, and private interests whose timber holdings are threatened.

DEVELOPMENT OF PERSONNEL

When the forestry branch of the Indian Service was organized in 1910, a personnel program was contemplated (6, p. 475) providing for the employment of a forester, assistant forester, and superintendent of logging, whose duties were to be those of general inspection and supervision; 3 men to have similar duties within 3 assigned portions of the United States which were described as comprising the Southwestern, the Northwestern, and the Central States; about 12 or 15 forest assistants and lumbermen in charge of the forestry work on the more important timbered reservations under the jurisdiction of the superintendents of the reservations, and a force of about 112 forest guards and rangers under the jurisdiction of the superintendents on about 40 reservations having large forest interests.

In carrying out this program, which has been modified to some extent as circumstances demanded, considerable difficulty has been encountered in retaining the services of competent men because of inadequate salaries (minimized somewhat since the reclassification) and living conditions and the somewhat unusual working conditions. A forester in the Indian Bureau, to render efficient and satisfactory service must not only have technically trained and fully alert mental equipment, but must be able to recognize fully the peculiar problems confronting the Indian Service with respect to the Indian wards of the Government; must win the confidence and respect of these people; and be guided to a very large extent in his work by a consideration of the best interests of the Indians. Although the turnover in the total number of forestry employees has been relatively large, the generally satisfactory progress which has been made in forestry work on Indian reservations has been due in some measure at least to the fact that the turnover in employees in supervisory forestry work has not been as large as in the more subordinate positions. The Director of Forestry has been able to build up a force of technically trained men who have acquired an intimate knowledge of Indian affairs and who understand the importance of Indian forest property in a general program which has as its objectives the social, industrial, and economic improvement of the Indian race.

If forestry practice on Indian reservations is to be improved one of the outstanding needs for all forest activities is an increased personnel, particularly for forest-fire prevention and suppression, general timber sale administration, grazing administration, and forest improvement work.

COST OF FORESTRY WORK

Table 6 gives the best available data of expenditures for forestry work on Indian reservations by major funds and years since 1910. Forestry is but one phase of a complex Indian problem and, as has been stated above, is inextricably intertwined with other Indian Service activities. Because of these things, foresters in the Indian Service are called upon to perform many nonforest duties which, in some instances, require an appreciably large amount of their time. While some funds from tribal moneys (mainly the appropriation "Indian Moneys, Proceeds of Labor") have been used for forestry work and are not included in table 6, this amount is equalled if not exceeded by the moneys spent (in wages and other items) on nonforest activities from the forestry funds given in the table.

TABLE 6.—Expenditures for all forestry purposes under annual appropriation

Year	Industrial work and care of timber, forestry	Expense account, timber ¹	Total	Regularly employed foresters ²
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Number</i>
1910.....	77,741.16	7,080.82	84,821.98	
1911.....	90,000.00	11,572.90	101,572.90	
1912.....	99,132.15	10,150.24	109,282.39	
1913.....	104,675.76	15,297.91	119,973.67	
1914.....	91,966.47	16,252.17	108,218.64	
1915.....	112,819.26	13,236.68	126,055.94	
1916.....	105,221.95	21,967.10	127,189.05	
1917.....	104,834.74	32,746.79	137,581.53	
1918.....	98,824.82	37,472.84	136,297.66	
1919.....	106,625.85	46,109.42	152,735.27	
1920.....	102,800.43	88,478.59	191,279.02	
1921.....	109,077.94	60,623.09	169,701.03	180
1922.....	89,889.59	50,873.02	140,762.61	175
1923.....	99,455.42	100,190.99	199,646.41	192
1924.....	95,212.25	153,568.33	248,780.58	190
1925.....	115,625.60	122,442.15	238,067.75	178
1926.....	106,577.23	167,840.15	274,417.38	176
1927.....	139,939.66	162,407.26	302,346.92	167
1928.....	97,295.39	196,818.55	294,113.94	125
1929.....	129,353.69	217,701.90	347,055.59	126
1930 ³	166,197.26	240,707.43	406,904.69	135
1931 ⁴	324,427.00	247,769.87	572,196.87	116
Total.....	2,567,693.62	2,021,308.20	4,589,001.82	

¹ Authorized deductions from timber-sale receipts.
² In addition to which there are or have been approximately 10 "at large" employees and 3 or 4 in the Washington Office.
³ All grazing activities taken over by forestry employees.
⁴ Includes \$50,000 for emergency employment on construction work (relief legislation) and an additional amount of about \$50,000 of deficiency appropriation for forest-fire suppression.

CONCLUSION

The approximately 71 million acres of land (being very nearly equal to the combined area of all the New England States and the State of New York), which are the property of the American Indian and held in trust for him by the United States Government, are of very great importance in the Western States and regions in the timber and live-stock industries. In formulating a national program of wise use of forest and range resources, this large area of Indian land, under the administration of one branch of the Government, is entitled to careful consideration.

Viewed not only from the standpoint of the Indians themselves but in terms of a national-forest and range-land policy, the crux of

the present unsatisfactory situation on Indian lands in the face of which sound management plans can hardly be evolved and carried out is the instability of land ownership.

The discontinuance of the practice of allotting forest and range land should immediately be accomplished by means of legislation prohibiting further allotments of land of this character.

Repeated efforts have been made since 1910 to obtain legislation necessary to insure the stability of ownership of large areas of Indian forest land of such character that it should unquestionably be permanently maintained in consolidated ownership for forest production and water-conservation purposes. The act of May 18, 1916 (39 Stat. 137), creating the Red Lake Indian Forest of approximately 110,000 acres has been the only legislation so far obtained, although similar bills pertaining to the Colville, Klamath, Warm Springs, and Yakima Reservations were introduced in the second session of the Seventy-first Congress. Legislation of like character is needed for the Flathead, Fort Belknap, and Tongue River Reservations in Montana; the Neah Bay and Spokane in Washington; the Fort Hall in Idaho; the Hoopa Valley in California; the Shoshone in Wyoming; the Mescalero in New Mexico; the Navajo, Fort Apache, San Carlos, and Truxton Canyon in Arizona; and possibly for several smaller areas.

Bills covering these reservations should be introduced in the next session of the Congress. With the realization that the establishment of a permanent status for Indian forest lands is essential to their highest economic use for the Indians themselves, and is also the most desirable policy for the Nation at large, these bills should be actively supported by all who believe that the present forest situation in the United States calls for the adoption and carrying out of a conservative national policy.

The United States Government should restore, insofar as is practicable, the former unified tribal status of Indian forest and range lands, and should maintain in a tribal status these restored lands as well as the present area of tribal forest and range lands, should adequately protect them from fire, and fully preserve their protective character and improve their productive value.

Just as the act of February 26, 1927, authorizing the cancelation of fee patents on Indian allotments, was intended to correct insofar as possible a mistaken land policy, legislation to restore to Indian tribal ownership those parts of possible working units of forest land which have been alienated and are now in varied ownership which precludes their proper protection and economic use should be enacted.

This act should provide for the establishment of tribal forests in units of sufficient size to be managed economically and for the buying back and inclusion in such tribal forest land that was originally Indian tribal land but which is now owned by individual Indians or by whites. The price per acre should not be in excess of the going price of nonagricultural cut-over timberland in the immediate neighborhood and should be limited in the enabling act. Where possible tribal funds derived from the sale of timber should be used for this purpose, and where these funds are not sufficient gratuity appropriations should be made available.

That the regulations and policies of the forestry branch of the Indian Service, originally approved in 1911, were basically sound

and conservative is generally recognized. These policies which have been modified and improved by subsequent regulations, should be extended and intensively carried out. To this end larger appropriations are needed for additional improvements and equipment and an increased personnel, the details of which would require a larger amount of investigation and analysis than has been possible in preparing this report.

The efficient functioning of the forestry branch will be materially aided when funds and personnel are available for the collection and compilation of reliable and complete statistical data on all forest resources and all details of costs and administration. In fact, administrative officers cannot exercise proper control without such data. The lack of sufficient funds and personnel for this purpose has constantly handicapped the forestry branch of the Indian Service and this situation should be immediately remedied.

The public has, through the Congress, given its approval to the acquisition of large areas of mismanaged private forest production and protection lands by the Government; for the incorporation of these lands into new national forests; and for the extension of existing national forests. The public good clearly justifies this program of enlargement of the national forests. The general public is clearly interested in and must be responsible for the maintenance of an adequate supply of timber in the United States; for the protection of watersheds (the source of its water for domestic use and the protection of millions of dollars of invested capital in irrigation and power projects) and for the regulation of streamflow; for the prevention of destructive erosion of range and agricultural land; and for the maintenance of forested areas of inestimable recreational and inspirational value to the entire body politic.

Into this national picture the 71 million acres of Indian land fit with such perfect clearness that the public responsibility is inescapable. Many Indian tribes are possessed of great natural resources which are not susceptible of individual allotment and which from the standpoint of sound national economy should be preserved in large working units so that they may be conserved and used effectively (9).

It is self-evident that the National Government should properly conserve and use those areas of forest and range land now under its jurisdiction. The welfare of the Indians and the public good demand the prompt correction of easily discernible errors of legislation and administration of Indian lands which have resulted in the breaking up of the unified ownership of large areas of forest and range lands; which have made impossible the proper protection and economic use of these lands; and which have forced or will force many thousands of acres of forest and range land through the gamut of Indian ownership to private ownership and finally to swell the total of non-productive, unprotected, tax delinquent, and tax foreclosed land. Unless remedial action is promptly taken, these conditions, which are deplorable from the national standpoint of conservation and wise use, will constantly become aggravated and more extensive. Not only will damage measured in dollars by millions have been done, but the proper management of these lands will be postponed for several decades at least, if it is ever possible.

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